

Site Safety Plan

A. SITE DESCRIPTION

Date 3/24/2005 4:54 PM

Location ISOM Unit, BP Teks City

Hazards Benzene; VOC; H2S; SO2; Fire; Asbestos; Slippery surfaces; compromised structure, platforms, piping; biohazards; trapped hydrocarbon that could be release if disturbed and present potential fire hazards; X-ray crew radioactive sources on site, but secured; established asbestos-regulated area in Exclusion Zone (i.e., ISOM ISBL)

Area affected ISOM

Surrounding population West Plant

Topography na

Weather conditions Fair temperature in the 70s F, SE @ 10 mph @9:30AM

Additional information Humidity 70%, visibility 10 miles

- B. **ENTRY OBJECTIVES** - The objective of the initial entry to the contaminated area is (to describes actions, tasks to be accomplished; i.e., identify contaminated soil; monitor conditions, etc.) contain fire Continue search and retrieve personnel. Begin initial site assessment and investigation.

- C. **ONSITE ORGANIZATION AND COORDINATION** - The following personnel are designated to carry out the stated job functions on site. (Note: One person may carry out more than one job function.)

On Scene Commander Bruce Sanders/John McLemore

Site Safety Officer Joe Hockless/Greg Perez

FEDERAL AGENCY REPS

- ☒ EPA Karen McCormick
- ☒ OSHA Kimi Scarpa, Chi Bui
- ☒ Chemical Safety Board in route
- ☐ U.S. Coast Guard
- ☐ National Response Center (NRC) notification by phone
- ☐ Other
- ☐ Other

STATE AGENCY REPS

- ☒ TCEQ Walter Rodriguez
- ☐ General Land Office
- ☒ State Emergency Response Center (SERC) notification by phone

LOCAL AGENCY REPS

- ☒ TC Emergency Management Bruce Claussen
- ☐ TC Mayor

CONTRACTOR(S)

- ☒ Industrial Mutual Aid System (IMAS)
- ☐ Marathon
- ☐ Dow
- ☐ ISP
- ☒ Channel Industrial Mutual Aid (CIMA)
- ☒ Other Garner Environmental, Curtis Galloway/Chad Smith

- ☒ Other Chad Hall, Weston Solutions for EPA
☐ Other

All personnel arriving or departing the site should log in and out. All activities on site must be cleared through the On Scene Commander.

D. **ONSITE CONTROL ISSC**

ISSC has been designated to coordinate access control and security on site. A safe perimeter has been established at (distance or description of controlled area) All streets around ISOM unit barricades No unauthorized person should be within this area.

The Tactical Command Post and staging area have been established at south side of warehouse The prevailing wind conditions are SE at 09:30. The Tactical Command Post is located is upwind from the Exclusion Zone.

Control boundaries have been established, and the Exclusion Zone (the contaminated are), hotline, Contamination Reduction Zone, and Support Zone (clean area) have been identified and designated as follows: (describe boundaries and/or attach map of controlled area)
 Exclusion Zone is now the ISOM Unit ISBL. The Recovery Zone is west of the ISOM unit and east of the Catalyst Warehouse. Decon Area is west of NDU

These boundaries are identified by: (marking of zones, i.e., red boundary tape - hotline; traffic cones - Support Zone, etc.) Security established restricted access to scene. Exclusion Zone (ISOM OSBL) is being marked as an asbestos-regulated area. Physical barricades are in place that encompasses the ISOM and NDU.

E. **HAZARD EVALUATION**

The following substance(s) are known or suspected to be on site. The primary hazards of each are identified.

Substances Involved (chemical name)	Concentrations (if known)	Primary Hazards (e.g., toxic, inhalation, skin)
Benzene	0.5% in feed, potential for exposure above 1 ppm	toxic, inhalation, carcinogenic
VOC	possibly above 300 ppm	irritant, inhalation
H2S	possibly above 1 ppm	toxic, inhalation
SO2	possibly above 1 ppm	toxic, inhalation
Asbestos	wetted, not a concern clean-up, potential for exposure above PEL, in Exclusion Zone (i.e., ISOM ISBL); Recovery Zone is clear	toxic, carcinogenic, inhalation

The following additional hazards are expected on site: (i.e., slippery ground, uneven terrain, etc.) Slippery surfaces; compromised structure, platforms, piping; biohazards; trapped hydrocarbon that could be release if disturbed and present potential fire hazards; contractor inspection trailer with radiation sources need to be secured; Exclusion Zone (i.e., ISOM OSBL) is being marked as asbestos-regulated area

F. **PERSONAL PROTECTIVE EQUIPMENT**

Based on evaluation of potential hazards, the following levels of personal protection have been designated for the applicable work areas or tasks:

Location	Job Function	Level of Protection				
Exclusion Zone (i.e., ISOM ISBL)	Reponse Team/ Recovery Team	<input type="checkbox"/> A	<input type="checkbox"/> B	<input checked="" type="checkbox"/> C	<input type="checkbox"/> D	<input checked="" type="checkbox"/> Other
Contamination Reduction Zone (Miken and CIMA Decon Trailer on scene)	EMT	<input type="checkbox"/> A	<input type="checkbox"/> B	<input checked="" type="checkbox"/> C	<input type="checkbox"/> D	<input checked="" type="checkbox"/> Other
Recovery Zone	Response Team/ Search Crew	<input type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D	<input checked="" type="checkbox"/> Other
		<input type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D	<input type="checkbox"/> Other
		<input type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D	<input type="checkbox"/> Other

Level A Fully-encapsulating suit, SCBA, disposable coveralls

Level B Splash gear, SCBA

Level C Disposable coveralls, half-mask air-purifying respirator w/ organic vapor/acid gas/HEPA filters

Level D

Other Asbestos abatement team - tyvek suits and full-face respirators with HEPA filters. Tyvek suits will be taped.

Search crew: rubber boots, rubber gloves.

Note: Garner to handle biohazard remediation.

The following protective clothing materials are required for the involved substances:

Substances Involved (chemical name)	Type of chemical protective material (e.g., Viton)
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na

If air purifying respirators are authorized not required based on initial monitoring, organic vapor/acid gas cartridges/ HEPA filters for recovery team in exclusion zone is the appropriate cartridge for use with the involved substances and concentrations. A competent individual has determined that all criteria for using this type of respiratory protection have been met.

NO CHANGES TO THE SPECIFIED LEVELS OF PROTECTION SHALL BE MADE WITHOUT THE APPROVAL OF THE SITE SAFETY OFFICER AND THE ON SCENE COMMANDER.

G. ONSITE WORK PLANS

Work party(s) consisting of 225+ persons will perform the following tasks:

Function	Task
On-Scene Commander	search & rescue
Work Party #1	
Work Party #2	
Rescue Team	search & rescue
Rescue Team for IDLH entries (contractor)	na
Decontamination Team	maintain trailer
Rehab Team (Rest Firefighters on standby)	support/relieve ERT members
Other Command Section	coordinate IMT and unified command
Other Operations Section	provide support to and communicate with Tactical Team
Other EAP	counseling for personnel

Other HR	support to injured & their families; support to families of those missing and fatally injured
Other Legal	claims administration;
Other Logistics	provide procurement and logistics support
Other Planning	provide planning support to IMT and Tactical Team
Other P&GA	coordinate communications with Media & government

The work party(s) were briefed on the contents of this plan at shift change and periodically throughout the shift.

H. COMMUNICATION PROCEDURES

Radio Channel Fire 1 and Fire 3 has been designated at the radio frequency for personnel in the Exclusion Zone. All other onsite communications will use normal channels.

Personnel in the Exclusion Zone should remain in constant radio communication or within sight of the On Scene Commander. Any failure of radio communication requires an evaluation of whether personnel should leave the Exclusion Zone.

Radio Channel Fire 1 is the emergency signal to indicate that all personnel should leave the Exclusion Zone. In addition, a loud hailer is available if required.

The following standard hand signals will be used in case of failure of radio communications:

Hand gripping throat	Out of air, can't breathe
Grip partner's wrist or	Leave area immediately
both hands around wrist	
Hands on top of head	Need assistance
Thumbs up	OK, I am all right, I understand
Thumbs down	No, negative

Telephone communication to the Command Post should be established as soon as practicable. The phone numbers are (409) 771-7010, (409) 771-7362, FAX in Command Post out of order, alternate Fax X22465 .

I. DECONTAMINATION PROCEDURES

Personnel and equipment leaving the Exclusion Zone shall be thoroughly decontaminated if required. The standard level a decontamination protocol shall be used with the following decontamination stations:

- a. Shower off Tyvek, remove, and shower body
- b.
- c.

Emergency decontamination will include the following stations:

Current stations: Miken and CIMA Decon trailer set up on the south side of the warehouse.

Note: Garner to handle biohazard remediation.

The following decontamination equipment is required: Miken and CIMA Decon trailer

Soap and water will be used as the decontamination solution.

J. SITE SAFETY AND HEALTH PLAN

1. Joe Hockless/Greg Perez is the designated Site Safety Officer and is directly responsible to the On Scene Commander for safety recommendations on site.
2. All available site EMT including BP and contractors are the qualified EMTs on site., available on scene by Radio Channel Fire 1 and Fire 3 . Have been briefed on the situation, the potential hazards, and the substances involved.

A map of alternative routes to this facility is available at Tactical Command Post

Local ambulance service is available on scene at Radio Channel Fire 1 . Whenever possible, arrangements should be made for onsite standby.

First aid equipment is available on site at the following locations:

First aid equipment	Ambulance, Medical Dept, Gate 42 First Aid Trailer
Emergency eye wash	available on unit; decon trailer available
Emergency shower	available on unit; decon trailer available
Other	

Emergency medical information for substances present:

Substance (chemical name)	Exposure Symptoms	First Aid Instructions
Fuel gas	See MSDS	See MSDS
Natural gas	See MSDS	See MSDS
Benzene	See MSDS	See MSDS
Butane	See MSDS	See MSDS
Hydrogen sulfide (H ₂ S)	See MSDS	See MSDS
Light raffinate	See MSDS	See MSDS
Pentane	See MSDS	See MSDS
Spent Caustic	See MSDS	See MSDS
MEA	See MSDS	See MSDS
Turbinol Select ISO 46	See MSDS	See MSDS
Hexane	See MSDS	See MSDS
C1-C4 Hydrocarbons	See MSDS	See MSDS
C5+C6 Isomerization	See MSDS	See MSDS
Naphtha		
Light Virgin Naphtha	See MSDS	See MSDS
Hydrotreated Naphtha	See MSDS	See MSDS
Nalco 73134	See MSDS	See MSDS
Nalco 73181	See MSDS	See MSDS
Nalco 73272	See MSDS	See MSDS
Sodium Hypochlorite 7-15%	See MSDS	See MSDS
Asbestos	See HSE Policy PR-11	See HSE Policy PR-11

List of emergency phone numbers:

Agency/Facility	Phone #	Contact
Police	911	
Fire	911	
Hospital	911	
Airport	na	
Public Health Advisor		

Other
Other
Other
Other

3. Environmental Monitoring

The following environmental monitoring instruments shall be used on site (cross out if not applicable) at the specified intervals.

Substance (chemical name)	Instrument	Purpose
Benzene	UltraRae	Exclusion zone, recovery zone, and ULC area monitoring (discontinued at 3:00 pm on 3/24)
VOC	AreaRae	Community monitoring Internal perimeter monitoring (discontinued at 3:00 pm on 3/24)
H2S	UltraRae AreaRae	Community monitoring Internal perimeter monitoring (discontinued at 3:00 pm on 3/24)
SO2	MSA Passport AreaRae	Community monitoring Internal perimeter monitoring (discontinued at 3:00 pm on 3/24)
Asbestos	MSA Passport 25 mm MCE filters w/ 50 mm cowl & personal sampling pump Bulk sampling	Community monitoring Exclusion zone, recovery zone, and ULC area for clearance monitoring (initial monitoring results at ISOM are negative) Recovery Zone (results negative)

4. Emergency Procedures (should be modified as required for incident)

The following standard emergency procedures will be used by onsite personnel. The Site Safety Officer shall be notified on any onsite emergencies and be responsible for ensuring that the appropriate procedures are followed.

Personnel Injury in the Exclusion Zone: Upon notification of an injury in the Exclusion Zone, the designated emergency signal on Radio Channel Fire 1 shall be sounded. All site personnel shall assemble at the decontaminated line. The rescue team will enter the Exclusion Zone (if required) to remove the injured person to the hotline. The Site Safety Officer and On Scene Commander should evaluate the nature of the injury, and the affected person should be decontaminated to the extent possible prior to movement to the Support Zone. The onsite EMT shall initiate the appropriate first aid, and contact should be made for an ambulance and with the designated medical facility (if required). No persons shall reenter the Exclusion Zone until the cause of the injury or symptoms is determined.

Personnel Injury in the Support Zone: Upon notification of an injury in the Support Zone, the On Scene Commander and Site Safety Officer will assess the nature of the injury. If the cause of the injury or loss of the injured person does not affect the performance of site personnel, operations may continue, with the onsite EMT initiating the appropriate first aid and necessary follow up as stated above. If the injury increases the risk to others, the designated emergency signal Radio Channel Fire 1 shall be sounded and all site personnel shall move to the decontamination line for further instructions. Activities on site will stop until the added risk is removed or minimized.

Fire/Explosion: Upon notification of a fire or explosion on site, the designated emergency signal on Radio Channel Fire 1 shall be sounded and all site personnel assembled at the decontamination line. The fire department shall be alerted and all personnel moved to a safe distance from the involved area.

Personal Protective Equipment Failure: If any site worker experiences a failure or alteration of protective equipment that affects the protection factor, that person and his/her buddy shall immediately leave the Exclusion Zone. Reentry shall not be permitted until the equipment has been repaired or replaced.

Other Equipment Failure: If any other equipment on site fails to operate properly, the On Scene Commander and Site Safety Officer shall be notified and then determine the effect of this failure on continuing operations on site. If the failure affects the safety of personnel or prevents completion of the Work Plan tasks, all personnel shall leave the Exclusion Zone until the situation is evaluated and appropriate actions taken.

The following emergency escape routes are designated for use in those situations where egress from the Exclusion Zone cannot occur through the decontamination line: (describe alternate routes to leave area in emergencies)

In all situations, when an onsite emergency results in evacuation of the Exclusion Zone, personnel shall not reenter until:

1. The conditions resulting in the emergency have been corrected
2. The hazards have been reassessed.
3. The Site Safety Plan has been reviewed.
4. Site personnel have been briefed on any changes in the Site Safety Plan.

5. Personal Monitoring

The following personal monitoring will be in effect on site:

Personal exposure sampling: Personnel going into the Exclusion Zone and Recovery Zone will wear an organic vapor monitoring badge.

Medical monitoring: The expected air temperature will be high of 75 F. If it is determined that heat stress monitoring is required (mandatory if over 70°F) the following procedures shall be followed: personnel will take appropriate rest breaks and drink water. If exposures to benzene is high, biological samples (urine) will be collected at the end of the work shift.

6. Precautions for Biohazards

Emergency medical and rescue activities with potential exposure to bloodborne pathogens will only be handled by designated personnel who have been trained on the applicable procedures. See EMRT Policy EMT-3, Infection Control Plan.

All site personnel have read the above plan and are familiar with its provisions.

Job Title	Name	Signature
Site Safety Officer	Joe Hockless/Greg Perez	
On Scene Commander	Bruce Sanders/John McLemore	
Other Site Personnel		
IMT Safety Officer	Tom Halaska/Eddison Arnold	
IMT Operations Section Chief	Joe Hockless/Lester Brown	

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